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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,309

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Nobuhiro Ishizaka

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EXAMINER

DICKERSON, CHAD S

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/798,309

Applicant(s)

ISHIZAKA ET AL.

Examiner

CHAD DICKERSON

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2009.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/30/2009 has been entered.

Response to Arguments

2. Applicant's arguments, see page 7, filed 6/2/2008, with respect to the 112 1st and 2nd paragraph rejections have been fully considered and are persuasive. The 112 1st and 2nd paragraph rejections of claims 1-6 have been withdrawn.

3. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection. The amendment to the claims has necessitated a new ground(s) of rejection. However, the reference of Watanabe '289 is still being applied to the claims. The Applicant asserted that the features of (a) a print buffer for storing column data corresponding to the dividing regions of a predetermined column amount, (b) a column amount of the column data stored in the print buffer is smaller than a column amount of column data to be printed by one scanning are not

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taught by the Watanabe reference¹. The Examiner respectfully disagrees with first assertion, while another reference has been added to clearly perform another feature.

Regarding the features above, the Examiner would like to point out that the preamble limitations are performed. The first preamble limitation of "*a print buffer storing column data corresponding to the divided regions*" is clearly performed. When looking at figure 3, the horizontal to vertical converter circuit is used to convert data into column data. Since this converter only converts a certain amount of data at a time, this can be considered as storing column data in the printer buffer that corresponds to regions that are divided in an amount of 64x3640 bits. With the conversion of 64 lines into vertical, or column, data and this information not encompassing all of the image data, then it is clear that the above feature of having a print buffer store column data corresponding to divided regions of a predetermined column amount is performed².

Regarding the second contended feature, the Watanabe reference also performs this feature. Although the Examiner was given the area of support for the newly amended claim limitation, the area did not help to clarify the Examiner's interpretation of the feature. However, the Examiner still noticed in the publication of the application in paragraph [0157] somewhat of a better explanation of the feature. Based on that section, the Examiner gathered that the claim feature is meant to be interpreted as a printer buffer having an image data amount, or column data, stored that is smaller than the data that may be printed through one main scan of a print-head. With this

¹ See Applicant's arguments at page 7.

² See Watanabe '289 at column 5, lines 10-64.

interpretation, the Examiner noticed in Watanabe that the print buffers contained a capacity that only was able to hold enough data that was for one single scan of the recording head³. In the system of Watanabe, the invention mentions examples where the print buffers contain information that would allow the recording head to perform a single main scan and then once this scan is finished, the recording head would go to the next line for another whole main scan on the sheet⁴. However, since it is not clearly pointed out that the vertical, or column, data of the printer buffer is smaller than the amount of vertical, or column, data to be printed out by one scan, the Examiner decided to utilize the features of another reference, Casey '499, that performs the feature of having a data amount that is stored in the buffer and this amount is smaller than a data amount required to print one line in the main scanning direction⁵. The Watanabe reference involves having the printing device being connected to an external processing apparatus (see figure 8) and the Casey reference also involves an external device (i.e. a computer) that sends information to a printing device for printing (same field of endeavor). Since both inventions involve the communication of an external processing device to the printing device, it would have been obvious to one of ordinary skill to combine the Casey reference with the Watanabe reference.

³ Id. at column 4, lines 6-30 and column 5, lines 26-64.

⁴ Id. at column 6, line 58 – column 7, line 62.

⁵ See Casey '499 at column 5, lines 34-63.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289 (USP 5689289) in view of Casey '499 (USP 6097499).

Re claim 1: Watanabe '289 discloses a printing apparatus which divides a printing area in a scanning direction on a printing medium into a plurality of regions (i.e. in the system, the print head is used to print an area in a scanning direction representing multiple lines being read from a print buffer, which the multiple lines represents a plurality of regions in the document to be printed; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8) and has a print buffer for storing column data corresponding to the divided regions (i.e. the print buffer is used to store column data that has been recently converted to vertical data and this information is then printed as it is stored in the print buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), comprising:

input means for sequentially inputting block data corresponding to the divided regions and having a plurality of compressed raster data (i.e. the system contains a 4-line buffer, considered as an input means, that can store four lines of converted image data that has been decoded by a programmed process of the CPU (111). The decoded data represents data that is dot image data, considered as a raster, and this data is stored in the 4-line buffer. There are one-line representations that are decoded into a

dot image, or a raster, stored in the 4-line buffer and the 4-line buffer is able to store 4 lines, two after resolution conversion and two lines before resolution conversion. The 4-line buffer is able to then contain a plurality of rasters when storing these lines. While the receiver buffer (202) receives data of one line from the 4-line buffer, the receiver buffer receives data sequentially from the 4-line buffer if the receiver buffer is empty. Therefore, the sequential transfer of data from the 4-line buffer to the receiver buffer is performed. Also, since the image data of one line of an overall image is stored in the 4-line buffer, the divided regions of an overall image are used to be transferred to the receiver buffer. Lastly, with the data being expanded into dot image data and then, the dot image data being encoded again while being stored in the image buffer (104), this performs the feature of having dot image data, or a plurality of raster data, being encoded, or compressed; see col. 3, ln 47 – col. 5, ln 64);

acquisition means for acquiring N-bit raster data from the block data input to said input means by decompressing the compressed raster data (i.e. the raster buffer, considered as the acquisition means, receives, or acquires, lines of memory with a certain bit value (8x3640 bits) from the centronics sender. Specifically mentioned in column 4, lines 6-65, the raster buffer is used to decode, or decompress, data stored on the receiver buffer (202). Also, the programmed processing of the CPU1 (111) decodes data that is stored in the image buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

conversion means for converting the raster data into column data (i.e. the horizontal-to-vertical conversion circuit performs the feature of converting the raster

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information into vertical, or column data; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

transfer means for sequentially transferring the raster data acquired by said acquisition means to said conversion means (i.e. once the system realizes that the raster buffer has 8 line of memory stored in the buffer, this information is sent sequentially to the horizontal-to-vertical conversion circuit. Therefore, the feature of transferring the raster data to a converter to perform column conversion is performed; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

second transfer means for sequentially transferring N column data converted by said conversion means to the print buffer (i.e. in the system, the information in the memory that was converted into vertical information is then transferred to the print buffer once 8 lines is recognized to be stored and converted in the horizontal-to-vertical converter. This performs the feature transferring the converted data to the print buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

storage means for storing the N column data transferred from said second transfer means in the divided regions of the print buffer (i.e. the print buffer stores the vertical, or column data, transferred from the horizontal-to-vertical converter. The print buffer has 8 lines that represent 8 separate lines or regions of the print data that is stored in the print buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8); and

control means for executing transfer processing of said transfer means, transfer processing of said second transfer means, and conversion processing of said

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conversion means in synchronism with a predetermined signal (i.e. the CPUs (111 and 215) control the execution transferring the image data from the facsimile to the printer, transferring the image data to the raster buffer and transferring the information in the raster buffer to the horizontal-to-vertical conversion circuit. The transfers of the image data is based on the signal that represents when a buffer reaches the 8 lines of memory in the respective buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, Watanabe '289 fails to specifically teach the preamble limitation of a column amount of the column data stored in the print buffer being smaller than a column amount of column data to be printed by one scanning.

However, this is well known in the art as evidenced by Casey '499. Casey '499 discloses the preamble limitation of a column amount of the column data stored in the print buffer being smaller than a column amount of column data to be printed by one scanning (i.e. The Watanabe reference involves having the printing device being connected to an external processing apparatus (see figure 8) and the Casey reference also involves an external device (i.e. a computer) that sends information to a printing device for printing (same field of endeavor). Casey '499 performs the feature of having a data amount that is stored in the buffer and this amount is smaller than the data amount required for a printing of one line in the main scanning direction; see column 5, lines 34-63).

Therefore, in view of Casey '499, it would have been obvious to one of ordinary skill at the time the invention was made to have the preamble feature of a column amount of the column data stored in the print buffer being smaller than a column

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amount of column data to be printed by one scanning, incorporated in the device of Watanabe, in order to have a minimal buffer size in the printing system, while still being able to complete a printing pass during the print process (as stated in Casey '499 col. 4, lines 5-15).

Re claim 5: The teachings of Watanabe '289 and Casey '499 are disclosed above.

Watanabe '289 the apparatus according to claim 1, wherein said conversion means comprises holding means for holding N raster data transferred from said transfer means (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), and performs longitudinal/lateral conversion processing after said holding means holds the N raster data (i.e. the horizontal-to-vertical conversion means performs the vertical conversion to the data stored in the storage part of the device and this is performed once or after the data is being presently held in the conversion device; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289, as modified by the features of Casey '499, as applied to claim 1 above, and further in view of Iwasaki '403 (USP 6328403).

Re claim 2: The teachings of Watanabe '289 and Casey '499 are disclosed above.

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Watanabe '289 discloses the apparatus according to claim 1, wherein the block data contains a plurality of color component data (i.e. in the system, the data of the lines can be either black or white; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, the combination of Watanabe '289 and Casey '499 fails to teach the divided region is further divided into second regions in correspondence with the number of color components.

However, this is well known in the art as evidenced by Iwasaki '403. Iwasaki '403 discloses the divided region is further divided into second regions in correspondence with the number of color components (i.e. shown in figures 12, 13 and 17 are illustrated regions that require knowing the amount of a color that correspond to the print heads used in the system. Depending on the printing codes and the value analyzed from the printing codes will determine the color data that is used for printing; see col. 7, line 13 – col. 11, line 56).

Therefore, in view of Iwasaki '403, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of the divided region is further divided into second regions in correspondence with the number of color components, incorporated in the device of Watanabe '289, as modified by the features of Casey '499, in order to read out print data corresponding to the band position to be actually printed in units of colors (as stated in Iwasaki '961 col. 7, lines 27-65).

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7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289, as modified by Casey '499 and Iwasaki '403, as applied to claim 2 above, and further in view of Clark '856 (USP 7265856).

Re claim 3: The teachings of Watanabe '289 in view of Casey '499 and Iwasaki '403 are disclosed above.

However, Watanabe '289 in view of Casey '499 and Iwasaki '403 fails to teach the apparatus according to claim 2, wherein the block data contains a code representing a data delimiter between first color component data and second color component data.

However, this is well known in the art as evidenced by Clark '856. Clark '856 discloses the apparatus according to claim 2, wherein the block data contains a code representing a data delimiter between first color component data and second color component data (i.e. Clark '856 discloses using the printer firmware using the firegroup count and the offset data contained in the print header to be used to calculate the beginning and the ending of each application of color on a page. The use of these two factors serves as a data delimiter; see col. 5, lines 31-61).

Therefore, in view of Clark '856, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of the apparatus, wherein the block data contains a code representing a data delimiter between first color component data and second color component data, incorporated in the device of Watanabe '289, as modified by the features of Casey '499 and Iwasaki '403, in order to

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calculate the beginning and the ending points for application of a color (as stated in Clark '856 col. 5, lines 31-61).

Re claim 4: The teachings of Watanabe '289, as modified by Casey '499 and Iwasaki '403, and further in view of Clark '856 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 3, wherein said acquisition means outputs a second predetermined signal to said conversion means (i.e. in the system of Watanabe '289, when the CPU of the printer outputs a code to the respective buffer containing a certain amount of lines to be printed, this signal representing the memory information is output to the horizontal-to-vertical conversion means once the image information is determined to not contain all-white information and is 8 lines; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, the combination of Watanabe '289 and Casey '499 fails to teach when the code is determined.

However, this is well known in the art as evidenced by Iwasaki '403. Iwasaki '403 discloses when the code is determined (i.e. in the system of Iwasaki '403, the print codes are analyzed and are determined by the code analyzing means (616). When the codes are determined, a signal is given to the developing means to develop the data in order to be stored in the print buffers; see col. 7, line 16 – col. 11, line 56).

Therefore, in view of Iwasaki '403, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of when the code is

determined in order to have print data analyzed and developed based on the analyzed print data (as stated in Iwasaki '403 col. 5, lines 1-11).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289, as modified by Casey '499, Iwasaki '403 and Clark '856, and further in view of Iwasaki '961 (US Pub No 2002/0175961).

Re claim 6: The teachings of Watanabe '289 in view of Casey '499, Iwasaki '403 and Clark '856 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 4, wherein said conversion means comprises holding means for holding N raster data transferred from said transfer means (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), and when the second predetermined signal is input while said holding means holds M ($M < N$) raster data (i.e. in the system, when one line that is all white is interpreted, a signal is input into the system describing that fact. This signal occurs when the raster means is holding the a certain amount of raster information that is not greater than a certain number; (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), sets data in said holding means (i.e. in the case when the all white data signal is input into the system, the next image data is set in the raster buffer corresponding to the area of the next line; (i.e. the horizontal-to-vertical conversion

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means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8) and then performs longitudinal/lateral conversion processing (i.e. the horizontal-to-vertical conversion means performs the vertical conversion to the data stored in the storage part of the device and this is performed once or after the data is being presently held in the conversion device that was sent from the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, Watanabe '289 in view of Casey '499, Iwasaki '403 and Clark '856 fails to teach sets (N-M) "0" data in said holding means.

However, this is well known in the art as evidenced by Iwasaki '961. Iwasaki '961 discloses sets (N-M) "0" data in said holding means (i.e. Iwasaki '961 discloses setting data of one random number area to be 1 while setting others to be the number of zero. This is expressed in figures 7a and 7b. The mask in the RAM (604) memory is set to one, while other masks are set to zero; see figs. 7-10; paragraphs [0076]-[0086]).

Therefore, in view of Iwasaki '961, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of sets (N-M) "0" data in said holding means in order to permit or prohibit printing of a dot in a certain area of an image (as stated in Iwasaki '961 paragraph [0078]).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
10. Nohata '656 (USP 6111656) discloses an image communication apparatus that is able to acquire image data information and transfers the information within the equipment through several buffers and units for conversion before printing the image data.
11. Yamada (USP 6339480) discloses a printer driver for a color printer and the system comprises a raster to column conversion, a compression and a decompression of the raster data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAD DICKERSON whose telephone number is (571)270-1351. The examiner can normally be reached on Mon. thru Thur. 9:00-6:30 Fri. 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Haskins can be reached on (571)-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. D./
/Chad Dickerson/
Examiner, Art Unit 2625

/Twyler L. Haskins/
Supervisory Patent Examiner, Art Unit 2625